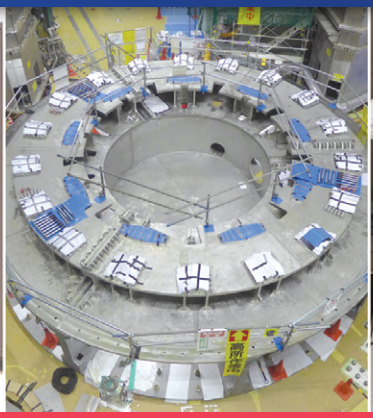

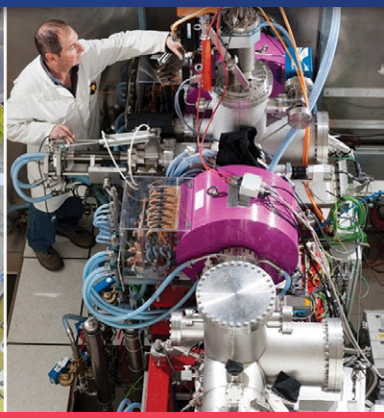

What are the Broader Approach activities?

The Broader Approach (BA) activities complement the ITER project and accelerate the realisation of fusion energy through R&D and advanced technologies for future demonstration fusion power reactors (DEMO). They are carried out under an agreement between the European Atomic Energy Community (Euratom) and Japan.

Both parties contribute equally financially. The Broader Approach agreement entered into force on 1 June 2007 and runs for at least 10 years.

The Broader Approach consists of three main projects located in Japan:

The Satellite Tokamak Programme (STP) project JT-60SA:

The JT-60SA (super, advanced) tokamak is being built in place of the JT-60U tokamak, using much of its heating and peripheral systems. It is a fully superconducting tokamak and able to operate for 100 s pulses with 40 MW of external heating. It will be used as a "satellite" facility of ITER to model proposals for optimising plasma operation and investigate advanced modes to be tested on ITER or DEMO.

The International Fusion Materials Irradiation Facility - Engineering Validation and Engineering Design Activities (IFMIF/EVEDA):

Fusion energy will require materials which maintain their physical properties and do not remain highly radioactive for extended periods of time after exposure to thermal and irradiation conditions inside the reactor. IFMIF will carry out testing and qualification of advanced materials in an environment similar to that of a future fusion power plant. IFMIF/EVEDA deals with the design of IFMIF as well as engineering validation of the hardware through the construction and testing of a prototype accelerator, prototypes of the liquid metal target, and cooling tests with helium gas of the test modules and specimens to be irradiated, in both Europe and Japan.

The International Fusion Energy Research Centre (IFERC):

IFERC covers three different sub-projects:

DEMO Design Research and Development Coordination Centre: coordinates design and R&D on materials and components for DEMO, identifying promising research directions and development programmes for testing on ITER and other devices.

Computational Simulation Centre (CSC): conducts high performance and large-scale fusion simulations of plasmas, fusion materials and technology, using the experimental results to predict the performance of ITER and to contribute to DEMO design. Helios is one of the fastest supercomputers in the world.

Remote Experimentation Centre (REC): aiming to carry out experiments on ITER remotely, the REC is developing and demonstrating the technology for remote data acquisition and control techniques by testing the principles on existing tokamaks.